**REMARKS**

In accordance with the foregoing, the specification, claims 15, 17, 20, 27, 29, 30-32 and 34 and drawings have been amended. Claims 16 and 28 have been cancelled without prejudice to or disclaimer of the subject matter disclosed therein. Claims 1-15, 17-27 and 29-38 are pending and under consideration.

**I. OBJECTION TO THE DRAWINGS.**

New Figure 4 is presented to illustrate the method as described in the originally filed specification and claims. No new matter is believed to have been added. Support for the method of detecting boundary violations is amply found in the specification as originally filed at least in paragraphs 0018-0022 and the original claims. Entry of the new drawing is respectfully requested.

**II. OBJECTION TO CLAIMS.**

Claims 28 and 34 are objected to because of various informalities. Claim 28 has been canceled and claim 34 has been amended taking the Examiner's comments into consideration.

In view of the above, it is respectfully submitted that the objection is overcome.

**III. REJECTION OF CLAIMS UNDER 35 USC §112.**

Claim 16-18, 20, 28-32, 34, and 37-38 stand rejected under 35 USC §112, second paragraph as being indefinite.

Each of the claims was amended taking the Examiner's comments into consideration. Specifically, each of the claims has been amended to refer to "recording or stopping recording."

In view of the above, it is respectfully submitted that the rejection is overcome.

**IV. REJECTION UNDER 35 USC 102(e).**

Claims 1-13, 15-24, 27-31 and 33-37 stand rejected under 35 USC §102(e) as being anticipated by Owa et al. (US Patent No. 6,564,009, "Owa"). Applicant respectfully traverses this rejection.

Owa discloses an optical disk recording and/or reproducing apparatus which increases a record density of the disk by rotating the disk in such a manner that the R/W CK is constant so that the line record density does not change significantly between the inner periphery and outer periphery of the disk. Owa further discloses that wobble data address in pre-groove (ADIP) may be decoded by detecting a phase change of the wobble signal. Then Owa discloses that by

comparing a binarized version of the wobble signal WB (i.e., data) 39 with a CK, having a frequency twice that of the binarized wobble signal, a result of the phase comparison may control an oscillation frequency of a voltage type oscillating circuit (VCO). Thus, in the PLL circuit 135, the frequency output by the VCO may be increased more than the frequency of the wobble signal WB (i.e., data) in steps in accordance with a displacement position of the laser beam to the outer peripheral side of the disk 12, and that the oscillation output may be a constant frequency R/W CK. (See Owa, col. 15, lines 7-13 and col. 41, lines 6-63).

However, in contrast, claim 1 recites, "detecting a phase difference *between the block boundary signal and an encoding block synchronous signal*; and detecting whether a violation of the boundary occurs according to a magnitude of the detected phase difference." (Emphasis added). Owa does not teach or disclose detecting the phase difference between the block boundary signal and the encoding block synchronous signal. Rather, Owa discloses that a phase difference is detected between a binarized version of the wobble signal and a clock CK, which is not equivalent to the encoding block synchronous signal. Further, there is no teaching in Owa that a determination of whether a violation of the boundary occurs is based on the magnitude of the detected difference as recited in claim 1. As noted above, Owa uses the detected difference between the CK and the wobble signal to control the oscillation frequency not detect boundary violations.

Claim 15 as amended, recites "receiving a signal from the disk and generating a block boundary signal therefrom, wherein each boundary between blocks is determined by the signal from the disk; generating a first window signal detecting whether a phase of the block boundary signal leads a phase of an encoding block synchronous signal from the encoding block; generating a second window signal detecting whether the block boundary signal and the encoding block synchronous signal exist within a range; generating a third window signal detecting whether the phase of the block boundary signal lags the phase of the encoding block synchronous signal; comparing the encoding block synchronous signal with the first window signal and outputting a first interrupt signal; comparing the encoding block synchronous signal with the second window signal and outputting a second interrupt signal; comparing the encoding block synchronous signal with the third window signal and outputting a third interrupt signal" Owa does not teach the recitations of claim 15 as amended. The Action equates the counter 189 of Owa with the above limitations. However, the counter 189 is detecting an advance phase and a retard phase between the wobble signal WB and the wobble clock WCK, not the wobble ADIP. (See Owa FIG. 51).

Claim 19 recites, "determining whether a violation of a block boundary occurs on a disk by determining *a phase difference between a block boundary signal and an encoding block synchronous signal*." (Emphasis added). However, for reasons similar to the arguments for patentability discussed with respect to claim 1, Owa does not teach or disclose detecting the phase difference between the block boundary signal and the encoding block synchronous signal. Rather, Owa discloses that a phase difference is detected between a binarized version of the wobble signal and a clock CK, which is not equivalent to the encoding block synchronous signal.

Claims 21 and 33 recite, "a boundary violation detector detecting a phase difference between the block boundary signal and the encoding block synchronous signal and detecting whether a violation of the boundary occurs according to a magnitude of the detected phase difference." In contrast, as discussed above, the phase difference detected by Owa is not of the two signals recited in claim 21. Further, Owa does not use the phase difference to detect a boundary violation. The error correction disclosed in Owa is used to determine if the ADIP data is correct (i.e., Owa determines whether an error in the address decoding occurred), but does not identify any reason for any error that is determined. (See Owa col. 41, lines 21-31).

Claim 27, as amended, recites, "a first window signal generator generating a first window signal detecting whether a phase of the block boundary signal leads a phase of an encoding block synchronous signal from the encoding block; a second window signal generator generating a second window signal detecting whether the block boundary signal and the encoding block synchronous signal exist within a range; a third window signal generator generating a third window signal detecting whether the phase of the block boundary signal lags the phase of the encoding block synchronous signal; a first logic gate comparing the encoding block synchronous signal with the first window signal and outputting a first interrupt signal; a second logic gate comparing the encoding block synchronous signal with the second window signal and outputting a second interrupt signal; a third logic gate comparing the encoding block synchronous signal with the third window signal and outputting a third interrupt signal; and a recorder and a microprocessor recording or stopping recording, according to the states of the first interrupt signal, the second interrupt signal, and the third interrupt signal." In contrast, Owa does not disclose any use of interrupts at all. Further, Owa does not teach or disclose detecting the phase difference between the block boundary signal and the encoding block synchronous signal. Rather, Owa discloses that a phase difference is detected between a binarized version of the wobble signal S2 and a clock CK, which is not equivalent to the encoding block synchronous signal.

The dependent claims 2-13, 17-18, 20, 22-24, 29-31 and 34-37 are believed allowable for at least their dependence upon an allowable independent claim and further for features recited therein. For example, claim 2 recites, "generating a window signal indicative of a recording allowable range based on the block boundary signal." Owa does not teach at least the generating the window signals recited in the claims of the present invention. Binarizing the wobble signal WB with respect to a 0 level detects edges of the wobble data signal rather than the ADIP signal. (See Owa col. 45, lines 40-62 and FIGS. 52A - 52D).

In view of the above, it is respectfully submitted that the rejection is overcome.

## V. REJECTION OF CLAIMS UNDER 35 USC §103.

Claims 14, 25, 26, 32 and 38 stand rejected under 35 USC §103 as being unpatentable over Owa et al. (US Patent No. 6,564,009, "Owa"). The rejection is respectfully traversed.

Claim 14 depends indirectly from claim 1. As discussed above, Owa does not disclose all the limitations of claim 1, for example, Owa does not disclose that a determination of whether a violation of the boundary occurs is based on the magnitude of the detected difference. Thus it is respectfully submitted that the Owa fails to teach or suggest each of the limitations of claim 14. Therefore, claim 14 is allowable at least based on its dependency, indirectly, from allowable claim 1.

Claims 25-26 are believed allowable at least based on their dependency, indirectly, from allowable claim 21 since Owa, as discussed above with respect to independent claim 21, does not teach or suggest all the limitations recited.

Claim 32 is believed allowable at least based on its dependency, directly, from allowable claim 27 since Owa, as discussed above with respect to independent claim 27 does not teach or suggest all the limitations recited.

Claim 38 is believed allowable at least based on its dependency, indirectly, from allowable claim 33 since Owa, as discussed above with respect to independent claim 33 does not teach or suggest all the limitations recited.

## VI. CONCLUSION.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.
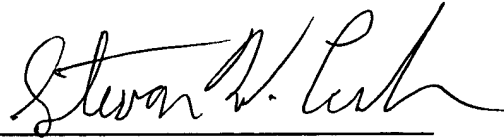
If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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**AMENDMENTS TO THE DRAWINGS**

In the Office Action at item 2, the Examiner objected to the drawings. In order to overcome these objections, a new figure is submitted herewith. In FIG. 4 the operations of a method of detecting a violation of a block boundary according to an embodiment of the present invention is illustrated. Support for new FIG. 4 is found at least in the specification as originally filed in paragraphs [0018]-[0022]. Approval of these changes to the Drawings is respectfully requested.